

Miranda Wastewater Solutions for Residences

Eczacıbaşı ORMANADA Case Study for Miranda STP System

Residence Design Data

Number of Guestrooms	: 500
Total Population	: 1750 people
Water Usage per Capita	: 52.83 gal/person
Daily Wastewater Flowrate	: 92,460 gal/day
The Quality of Treated Water	: Irrigation
Water Supply	: External Network
Area to be Irrigated (est.)	: 376,737 ft ²



"Eczacıbaşı Gayrimenkul Geliştirme ve Yatırım A.Ş."



In the majority of residential areas wastewater is simply discharged...

ORMANADA recycles wastewater for Irrigation, benefits occur as outlined table on the right.



Eczacıbaşı ORMANADA Residences, İstanbul MIRACELL Wastewater Treatment System Feasibility Analysis

Past Status

Monthly Irrigation Water Utilized in Summer Season (gal)	2,773,800
Average Amount Paid for Irrigation Water (Dollar/gal)	0.0057 \$
Monthly Water Charge (Dollar)	15,750 \$
Seasonal (6 Months) Water Charge (Dollar)	94,500 \$
Estimated charge to be paid for water in 10 years (Dollar)	945,000 \$

(Annual inflation percentages have been taken into account in all the projected water charges)

Status After Recycling of Wastewater with Miranda Wastewater Treatment System

Capacity of the WWTP (gal/day)	92,460
Monthly Capacity of the WWTP (gal/month)	2,773,800
Model of Miranda WWTP to be used: MIRACELL	400
Monthly Operational Charge of the WWTP (Dollar)	2,004 \$
Seasonal Operation Cost (Dollar)	12,024 \$
Estimated Operational Cost Projected for 10 years (Dollar):	120,240 \$

Savings To Be Gained From The Plant Operation in 10 Yrs. (Dollar):	824,760 \$
---	-------------------

* Cost of concrete storage tanks are not included in the calculations



You have a right to a clean environment

www.miranda-tr.com

Miranda Wastewater Solutions for Residences



Operational Advantages

- Miracell is simple to operate
- Requires a short 1 day training
- Requires minimal maintenance by any person
- System start-up to produce satisfactory treated water within 2 weeks after installation.
- Easy sludge disposal at comfortable frequency.
- System can be serviced by Miranda through local representatives or any trained technical maintenance team servicing the residential facilities.

Miranda's Miracell Sewage Treatment System complements residential communities by:

- Assisting the hotel to conserve water.
- Save significant amounts from the annual water expenditures.
- MIRACELL sewage treatment plants are made from composites and do not corrode.
- Miracell sewage treatment are lightweight and have a life span of over 15 years.



FEATURES & BENEFITS

- MODULAR
- DURABLE
- AESTHETIC
- SILENT
- ODORLESS
- DO NOT CORRODE
- CONSUMES LOW ENERGY



Can be installed Indoors & Outdoors or buried in ground

MIRANDA recycles waste water in conformity with irrigation norms (BOD 20, COD 120, TSS 30).

MIRACELL®

DROPBOX®



Operational Costs of the Miranda System

92,460 gal/day Capacity Miracell Blue W.W.T.P. Operation Cost Table Eczacıbaşı Ormanada

ENERGY CONSUMPTION

A. WASTEWATER TRANSFER PUMP		0.55 kW
Power	0.44 kW	
Amount	2 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	20 hour	
Energy Consumption Per Month	528 kW	
Cost Per Month	42.43 \$ / Month	
Cost Per Gallon	0.00001 \$ / gal	
B. MIRACELL GEARBOX & MOTOR		0.25 kW
Power	0.20 kW	
Amount	8 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	24 hour	
Energy Consumption Per Month	1,152 kW	
Cost Per Month	93.45 \$ / Month	
Cost Per Gallon	0.00003 \$ / gal	
C. CHLORINE, CAUSTIC, HCL DOSAGE PUMP		0.016 kW
Power	0.0128 kW	
Amount	4 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	20 hour	
Energy Consumption Per Month	31 kW	
Cost Per Month	2.46 \$ / Month	
Cost Per Gallon	8.8x10⁻⁷ \$ / gal	
D. SAND FILTER FEED PUMP		2.20 kW
Power	1.76 kW	
Amount	1 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	20 hour	
Energy Consumption Per Month	1,056 kW	
Cost Per Month	84.90 \$ / Month	
Cost Per Gallon	0.00003 \$ / gal	
E. SAND FILTER BACKWASH PUMP		2.20 kW
Power	1.76 kW	
Amount	1 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	1 hour	
Energy Consumption Per Month	53 kW	
Cost Per Month	4.3 \$ / Month	
Cost Per Gallon	1.5x10⁻⁶ \$ / gal	
F. ULTRAFILTRATION		3.00 kW
Power	2.40 kW	
Amount	1 pcs	
Treated Water Per Month	2,773,800 gal	
Daily Operation Time	20 hour	
Energy Consumption Per Month	1,440 kW	
Cost Per Month	115.78 \$ / Month	
Cost Per Gallon	0.00004 \$ / gal	
Total Annual Energy Cost	3,910 \$	
Total Annual Energy Cost Per Gallon	0.0001 \$	

FIXED DATA

Daily / Monthly Flow : 92,460 gal / 2,773,800 gal Motor Int. Power : 0.8
 Electric Cost : 0.08 \$ / kWh Absorbed Power : 0.8
 (Based on local power cost which varies by region) 1 Month : 30 days

Miranda is proud to assist in saving significant amounts of funds while contributing to the environment.



Miranda is proud to contribute to help keep Landscape of ORMANADA Residences greener.